

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-22 (Cancelled)

23. (New) A method for diagnosing a predetermined condition in a subject, said method comprising the steps of:

- (i) determining the amount, or relative amount, of a predetermined diagnostic species in a first breath sample;
- (ii) determining the amount, or relative amount, of said predetermined diagnostic species in a second breath sample;
- (iii) relating the results of steps (i) and (ii) with the presence or absence of said predetermined condition;

wherein said first sample and second sample are ex vivo and are derived from different phases of a breathing cycle of said subject, the first breath sample being of tidal breath and the second breath sample being of alveolar breath, and steps (i) and (ii) are carried out using a measurement apparatus arranged to detect the absorption of electromagnetic radiation at and around a known absorption wavelength for the diagnostic species.

24. (New) A method according to claim 23 wherein the predetermined condition is a condition that has a discernible effect on the oxidative stress and/or lipid peroxidation in the subject.

25. (New) A method according to claim 23 wherein the predetermined condition is one or more or a combination of: cancer, such as lung cancer; pulmonary disease; heart disease, chronic obstructive pulmonary disease, cardiovascular disease or peripheral vascular disease, ischaemia-reperfusion injury; Alzheimer's disease; attention deficit hyperactivity disorder; asthma; diabetes; immune and auto-immune diseases or disorders; post-organ-transplantation conditions; metabolic syndrome; stroke or other brain injury; liver disease; hyperlipidaemia; conditions resulting from hyperbaric or hyperoxia treatment; inflammatory bowel disease; vitamin E deficiency, selenium deficiency and other nutritional diseases; malnutrition; pregnancy; pre-eclampsia; gastro-intestinal conditions; or genetic disorder leading to increases in oxidative stress and/or lipid peroxidation.

26. (New) A method according to claim 23 wherein the diagnostic species is a species that is volatile at room temperature and pressure.

27. (New) A method according to claim 23 wherein the measurement apparatus has a laser source with tuneable wavelength.

28. (New) A method according to claim 27 wherein the measurement apparatus has phase-sensitive detection means to detect intensity fluctuations of the electromagnetic radiation from the laser source.